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**SECRETARY, BOARD OF
OIL, GAS & MINING**

**BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH**

IN THE MATTER OF THE REQUEST FOR
AGENCY ACTION OF WOLVERINE GAS AND OIL
COMPANY OF UTAH, LLC FOR AN ORDER
AUTHORIZING THE FLARING AND VENTING OF
GAS IN EXCESS OF THE AMOUNTS ALLOWED
UNDER UTAH ADMIN. CODE RULE R649-3-
20(1.1) FROM THE WOLVERINE FEDERAL
ARAPIEN VALLEY 24-1 AND PROVIDENCE
FEDERAL 24-4 WELLS LOCATED IN THE W¹/₂ OF
SECTION 24, TOWNSHIP 20 SOUTH, RANGE 1
EAST, SLM, SANPETE COUNTY, UTAH

**ORDER GRANTING MOTION FOR
AUTHORIZATION OF TESTING
PERIOD EXTENSION**

Docket No. 2010-010

Cause No. 269-01

Petitioner Wolverine Gas and Oil Company of Utah, LLC's ("Wolverine's") Motion for Authorization of Testing Period Extension dated and filed November 22, 2010 in this Cause came on for hearing before the Utah Board of Oil, Gas and Mining (the "Board") on Wednesday, December 8, 2010, at approximately 5:20 p.m., in the Auditorium of the Utah Department of Natural Resources Building in Salt Lake City. The following Board members were present and participated at the hearing: Chairman Douglas E. Johnson, Samuel C. Quigley, Jake Y. Harouny, Ruland J. Gill, Jr., James T. Jensen, and Kelly L. Payne. Board Member Jean Semborski was unable to attend. The Board was represented by Michael S. Johnson, Esq., Assistant Attorney General.

Frederick M. MacDonald, Esq., of and for Beatty & Wozniak, P.C., appeared as attorney for Wolverine. Also in attendance and available for testimony on behalf of Wolverine were Thomas W. Zadick – Consulting Reservoir Engineer for Wolverine and

its parent corporation, Wolverine Gas and Oil Corporation (“Parent Wolverine”), and Edward A. Higuera – Manager – Development of the Parent Wolverine, who were previously recognized by the Board in the prior hearing held February 24, 2010 in this Cause as experts in reservoir engineering and petroleum engineering, respectively.

Steven F. Alder, Esq., Assistant Attorney General, appeared as attorney on behalf of the Utah Division of Oil, Gas and Mining (the “Division”). Also in attendance and available for testimony on behalf of the Division were Dustin Doucet – Petroleum Engineer, and Clint Dworshak – Compliance Manager. Mr. Alder expressed the Division’s support for granting the Motion.

By Letter dated December 1, 2010 and filed on December 2, 2010, the United States Bureau of Land Management (“BLM”) expressed its support for granting the Motion. However, at the hearing, no BLM representative appeared.

Upon motion by Mr. Gill, without objection and duly seconded and unanimously approved, the Board, deeming the Motion to be uncontested and in the interest of time and brevity, requested and authorized Mr. MacDonald to proffer the testimony of Wolverine’s witnesses in a summary fashion, which he did. Based on the proffered testimony, Wolverine’s supplemental exhibits which were admitted into evidence, and the other pleadings filed in relation to this Motion and the record generated to date in this Cause, the Board unanimously voted to grant the Motion based upon the following findings and conclusions constituting good cause:

1. The Motion was duly noticed to the Division and the BLM, being the only interested parties having entered an appearance in this Cause.

2. By Order entered March 3, 2010 in this Cause, the Board authorized Wolverine to recomplete, restimulate, produce and conduct additional testing of the Wolverine Federal Arapien Valley 24-1 Well (the "24-1 Well") and the Providence Federal 24-4 Well (the "24-4 Well"), both located in the W½ of Section 24, Township 20 South, Range 1 East, SLM, Sanpete County, Utah, for a period of six months for each well with authorized flaring and venting of the associated oil well gas; provided that the aggregate volume of gas so flared and vented from both wells did not exceed 360,000 MCF for the authorized test/production period.

3. In accordance with the Board's Order, Wolverine conducted workover operations on the 24-4 Well from June 28, 2010 through July 10, 2011, after a short flow period from June 24 through June 27, 2010. The interval from 9014' to 9039' in the "Navajo 1" formation was re-peforated. The 24-4 Well has been on production since July 9, 2010. The 24-4 Well, after the workover, initially produced 113 BO/660 MCF/20 BWPd. Its current rate (as of November 14, 2010) is 46 BOPd/265 MCFpd/43 BWPd, with a producing GOR of 5761, flowing up tubing on a 48/64" choke with tubing pressure 116 psi. It has produced 7293 BO/44,852 MCF/5645 BW from June 24 through November 14, 2010.

4. Also in accordance with the Board's Order, Wolverine conducted workover operations on the 24-1 Well from July 10, 2010 through August 5, 2010. The workover consisted of setting a CIBP at 12,270', placing two feet of cement on top to isolate the "Navajo 2" formation perforations. A second CIBP was set at 9245' to facilitate completion of the "Navajo 1" formation. The "Navajo 1" formation was then perforated from 9019' to 9020' with 6 spf, 60 degrees phasing, 25 gram charge and a diagnostic fracture injectivity test ("D-Fit") was performed to facilitate fracture treatment design. After the D-Fit, additional perforations were placed in the "Navajo 1" formation from 8998' to 9019'. The 24-1 Well was placed on production August 4, 2010. The 24-1 Well, after the workover, initially produced 65 BOPD/622 MCFPD/19 BWPD. Its current rate (as of November 14, 2010) is 221 BOPD/2389 MCFPD/6 BWPD, with a producing GOR of 10,810, flowing up tubing on 32/64" choke with a tubing pressure of 922 psi. It has produced 18,229 BO/203,767 MCF/2054 BW from August 4 through November 14, 2010

5. The gas produced from the Providence Field "Navajo 1" formation is comprised of approximately 82% inert gases, comprised mainly of CO₂ and approximately 5 ppm H₂S. During the authorized test period, the gas has been vented in accordance with the Board's Order and an NTL-4A application approved by the BLM, and without any reported incidents or problems.

6. Aggregate volumes for both wells during this test period are 25,522 BO/248,619 MCF/7699 BW. Based on current gas rates, the Board-approved aggregate gas flaring/venting volume limitation of 360,000 MCF for the original test period will be reached on or about December 26, 2010. At that time, the 24-4 Well will have produced 173 days, and the 24-1 Well will have produced 143 days.

7. A key reservoir parameter necessary to design a final plan for producing the Providence Field Navajo 1 reservoir is the impact of aquifer encroachment, *i.e.*, will it behave more like a constant pressure boundary or will it be inactive and allow reservoir pressure to decline? This single parameter will impact the design of future planned pressure transient tests and could impact the perforation strategy, the manner in which wells are produced, the location of future wells (if viable) and the ultimate recovery from the reservoir.

8. The producing performance of the two wells were evaluated using Topaz, a normalized rate-time tool used to evaluate transient rate tests using both rate and pressure data and modern transient analysis methods. The purpose of the analysis was to determine if the currently approved production test duration would allow sufficient data capture to adequately model the reservoir and determine aquifer activity. The production data was modeled for two cases: 1) two-layer performance with constant pressure boundary (to model an active aquifer); and 2) two layer performance with a radial composite boundary that would mimic an inactive aquifer. The model searches for the

best combination of reservoir properties to best match the observed performance. The most sensitive comparison of model output to actual performance under the influence of various boundary conditions uses a log-log derivative curve of the reciprocal of normalized rate versus time. Once a match is achieved, the model can be used to forecast future performance based on assumed producing conditions.

9. The result of this analysis for the testing period to date shows that effects of a constant pressure boundary have not been observed, that the radial composite fit is not definitive and that the test needs to be extended to determine the nature of the oil-water boundary. Additional testing and data collection is therefore required.

10. With respect to the need for continuity in the testing, the time required to see the boundary is a function of the type of boundary encountered, the distance to that boundary and the permeability thickness product of the reservoir. If the two wells were to be shut-in for any period after the current flaring/venting limitation has been met, Wolverine will essentially have to start the entire test all over again to get back to the current status. One of the reasons for test continuity is to help Wolverine design how long it should leave bombs (pressure gauges) in the Wells at the end of the test period.

11. An extension of the testing period for an additional 60 days, continuous from the time the Board's original flaring/venting limitation has been reached, is therefore fair, just and reasonable under the circumstances to confirm the active or inactive nature of the aquifer; provided, that the aggregate amount of gas vented during

said additional test period from both wells may not exceed 160,000 MCF; and furthermore with the understanding that no further extensions of the testing period will be granted by the Board.

12. The Board has the authority to enter this Order pursuant to Utah Code Ann. §40-6-5(3)(f) and Utah Admin. Code Rules R641-104-160, R641-105-300, and R649-3-20(5) and (6).

IT IS THEREFORE ORDERED, ADJUDICATED AND DECREED that:

1. Wolverine's Motion for Authorization of Testing Period Extension is hereby granted.

2. Wolverine is hereby authorized to produce and test the 24-1 and 24-4 Wells for an additional 60-days beyond the point at which the flaring/venting limitation set under the Board's March 3, 2010 Order is reached; provided, that the aggregate volume of gas vented from both wells may not exceed 160,000 MCF for the authorized extended test/production period. No further extensions of the testing period will be granted.

3. As soon as practicable after the extended testing and production period and analysis of the data generated thereby, Wolverine shall provide supplemental and/or revised exhibits and reappear before the Board to provide additional testimony concerning its Request for Agency Action in light of such testing and production results to allow a final decision thereupon.

4. Pursuant to Utah Admin. Code Rules R641 and Utah Code Ann. §63G-4-

204 to 208, the Board has considered and decided this matter as a formal adjudication.

5. This Order is based exclusively on evidence of record in the adjudicative proceeding or on facts officially noted, and constitutes the signed written order stating the Board's decision and the reasons for the decision, all as required by the Administrative Procedures Act, Utah Code Ann. §63G-4-208 and Utah Administrative Code Rule R641-109.

6. Notice re: Right to Seek Judicial Review by the Utah Supreme Court or to Request Board Reconsideration: As required by Utah Code Ann. §63G-4-208(e) - (g), the Board hereby notifies all parties in interest that they have the right to seek judicial review of this final Board Order in this formal adjudication by filing a timely appeal with the Utah Supreme Court within 30 days after the date that this Order issued. Utah Code Ann. §§63G-4-401(3)(a) and 403. As an alternative to seeking immediate judicial review, and not as a prerequisite to seeking judicial review, the Board also hereby notifies parties that they may elect to request that the Board reconsider this Order, which constitutes a final agency action of the Board. Utah Code Ann. §63G-4-302, entitled, "Agency Review - Reconsideration," states:

(1)(a) Within 20 days after the date that an order is issued for which review by the agency or by a superior agency under Section 63G-4-301 is unavailable, and if the order would otherwise constitute final agency action, any party may file a written request for reconsideration with the agency, stating the specific grounds upon which relief is requested.

(b) Unless otherwise provided by statute, the filing of the request is not a prerequisite for seeking judicial review of the order.

(2) The request for reconsideration shall be filed with the agency and one copy shall be sent by mail to each party by the person making the request.

(3)(a) The agency head, or a person designated for that purpose, shall issue a written order granting the request or denying the request.

(b) If the agency head or the person designated for that purpose does not issue an order within 20 days after the filing of the request, the request for reconsideration shall be considered to be denied.

Id. The Board also hereby notifies the parties that Utah Admin. Code Rule R641-110-100, which is part of a group of Board rules entitled, “Rehearing and Modification of Existing Orders,” states:

Any person affected by a final order or decision of the Board may file a petition for rehearing. Unless otherwise provided, a petition for rehearing must be filed no later than the 10th day of the month following the date of signing of the final order or decision for which the rehearing is sought. A copy of such petition will be served on each other party to the proceeding no later than the 15th day of the month.

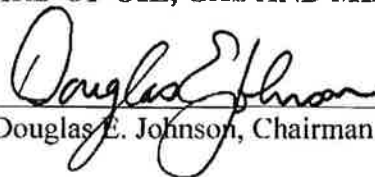
Id. See Utah Admin. Code Rule R641-110-200 for the required contents of a petition for Rehearing. If there is any conflict between the deadline in Utah Code Ann. §63G-4-302 and the deadline in Utah Admin. Code Rule R641-110-100 for moving to rehear this matter, the Board hereby rules that the later of the two deadlines shall be available to any party moving to rehear this matter. If the Board later denies a timely petition for rehearing, the party may still seek judicial review of the Order by perfecting a timely appeal with the Utah Supreme Court within 30 days thereafter.

7. The Board retains continuing jurisdiction over all the parties and over the subject matter of this cause, except to the extent said jurisdiction may be divested by the filing of a timely appeal to seek judicial review of this order by the Utah Supreme Court.

8. For all purposes, the Chairman's signature on a faxed copy of this Order shall be deemed the equivalent of a signed original.

DATED this 20 day of DECEMBER 2010.

**STATE OF UTAH
BOARD OF OIL, GAS AND MINING**

By: 
Douglas E. Johnson, Chairman

CERTIFICATE OF SERVICE

I hereby certify that, on this 20th day of December, 2010, I caused a true and correct copy of the foregoing Proposed Order to be mailed, postage pre-paid, and sent electronically to the following:

Frederick M. MacDonald
Beatty & Wozniak
Attorneys for Petitioner
6925 Union Park Center, Suite 525
Cottonwood Heights, UT 84047
E-mail: fmacdonald@bwenerylaw.com

Steven F. Alder, Esq.
Assistant Attorney General
Attorney for the Division of Oil, Gas and
Mining
1594 West North Temple, Suite 300
P.O. Box 145801
Salt Lake City, Utah 84114-5801
E-mail: stevealder@utah.gov

Michael S. Johnson, Esq.
Assistant Attorney General
Attorney for the Board of Oil, Gas and
Mining
1594 West North Temple, Suite 300
P.O. Box 145801
Salt Lake City, Utah 84114-5801
E-mail: mikejohnson@utah.gov

Cornell M. Christensen
Stan Andersen
United States of America
Bureau of Land Management
Richfield Field Office
150 East 900 North
Richfield, UT 84701
E-mail: Cornell_Christensen@blm.gov
E-mail: Stan_Anderson@blm.gov

Becky J. Hammond
Michael L. Coulthard
United States of America
Bureau of Land Management
Utah State Office
440 W 200 South, Suite 500
Salt Lake City, UT 84101
E-mail: Becky_Hammond@blm.gov
E-mail: Michael_Coulthard@blm.gov